



Tulsa Land Use Productivity

Urban Data Pioneers

Land Use Team

- Cathy Criswell – City Auditor
- John Dungan – Code for Tulsa
- Luisa Krug – Tulsa Health Department
- Stephen Lassiter – Magellan Midstream Partners, LP
- Catherine Moore – City Auditor's Office
- Nathan Pickard – City Auditor's Office
- With assistance from
 - Ty Simmons (INCOG)
 - Josh Wise and Matt Parsell (City of Tulsa GIS)

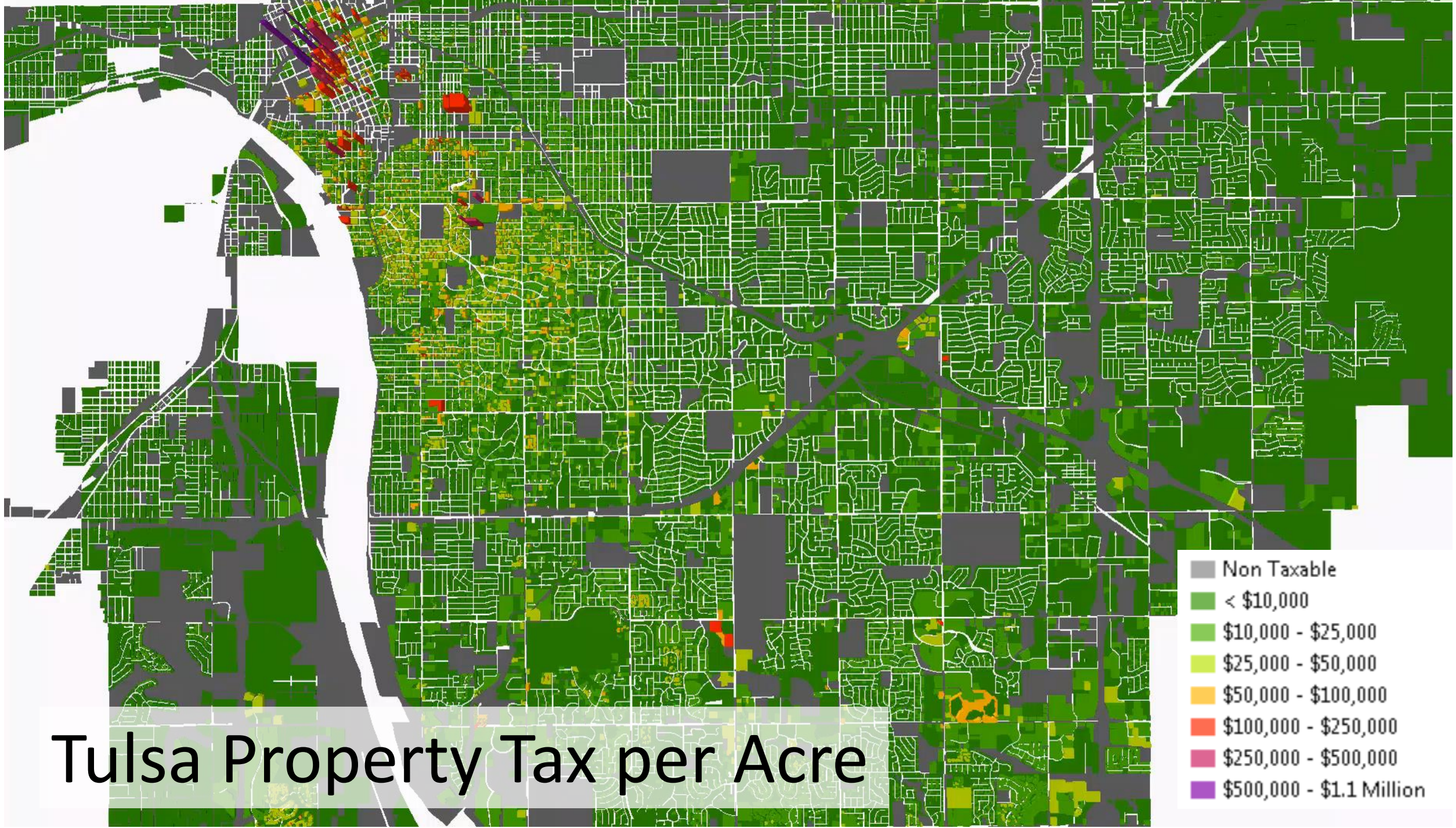
A green combine harvester is shown from a rear perspective, moving through a vast field of golden wheat. The harvester is positioned in the center of the frame, leaving a trail of harvested grain behind it. The sky above is a vibrant blue, filled with large, fluffy white clouds. The horizon line is low, showing a distant treeline. The overall scene conveys a sense of agricultural productivity and rural landscape.

Farming the city

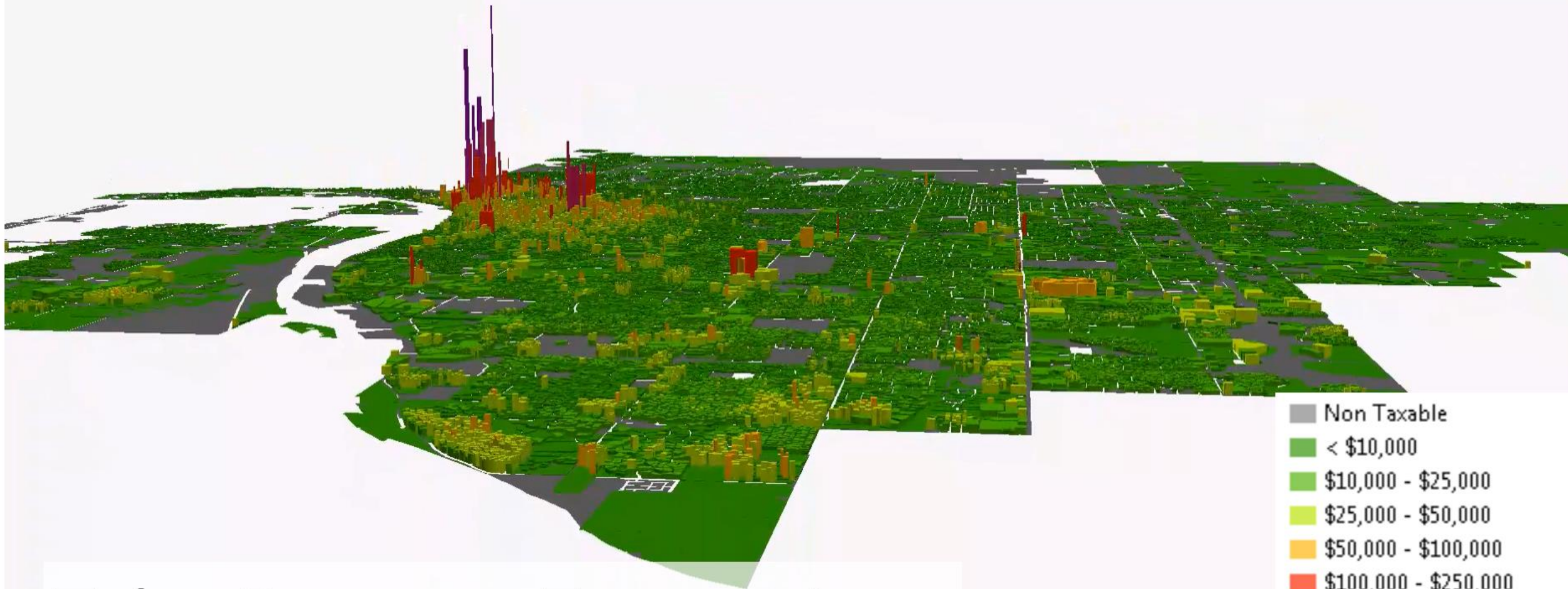
Understanding the yield of various development patterns

Property Tax

- Parcel shape files from INCOG and City of Tulsa
- Calculated estimated 2016 tax based on tax rate code
- Symbolized a graduated color scheme based on tax revenue/gross acres
- Extruded the results of each parcel as the polygon's elevation



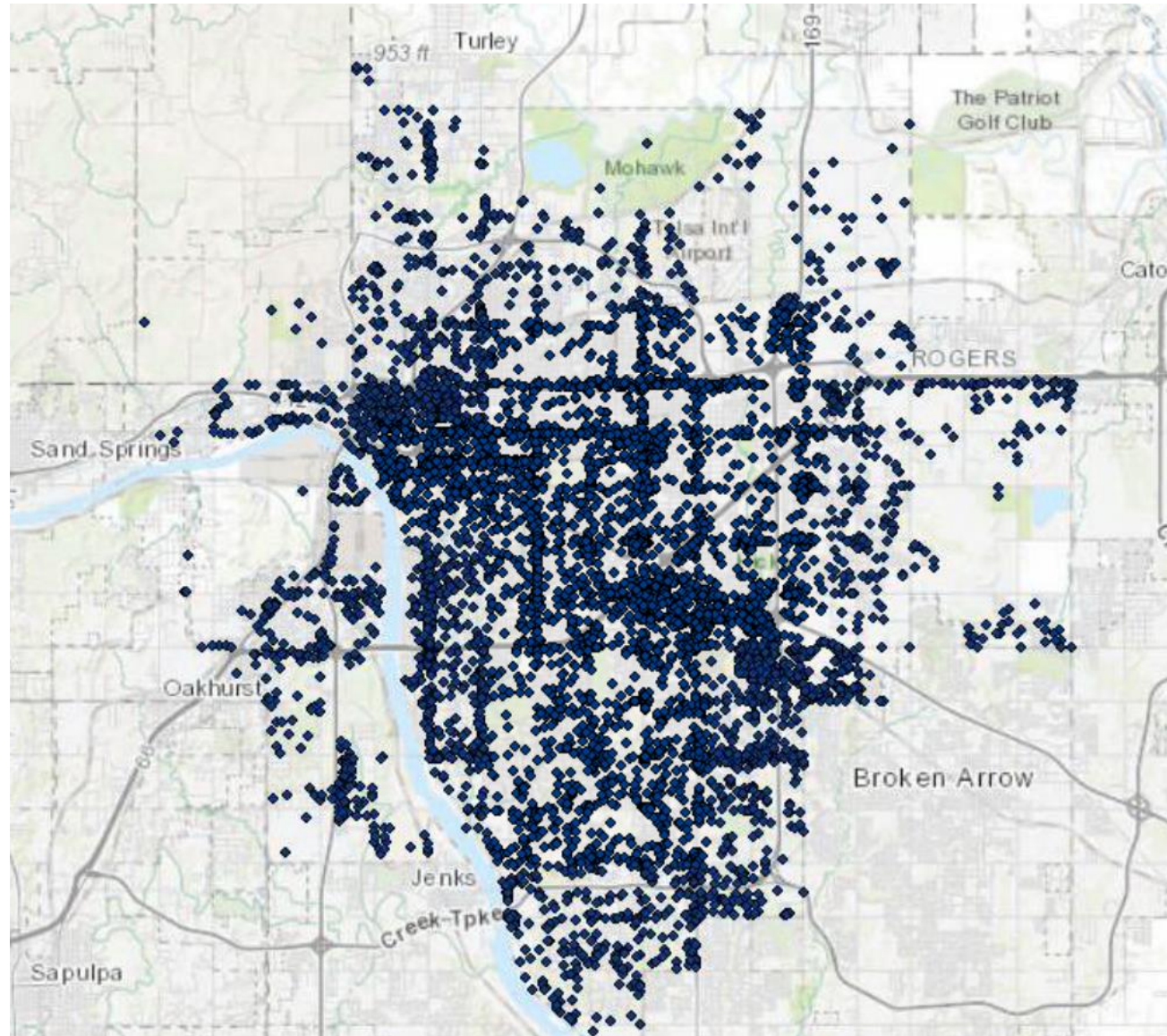
Tulsa Property Tax per Acre



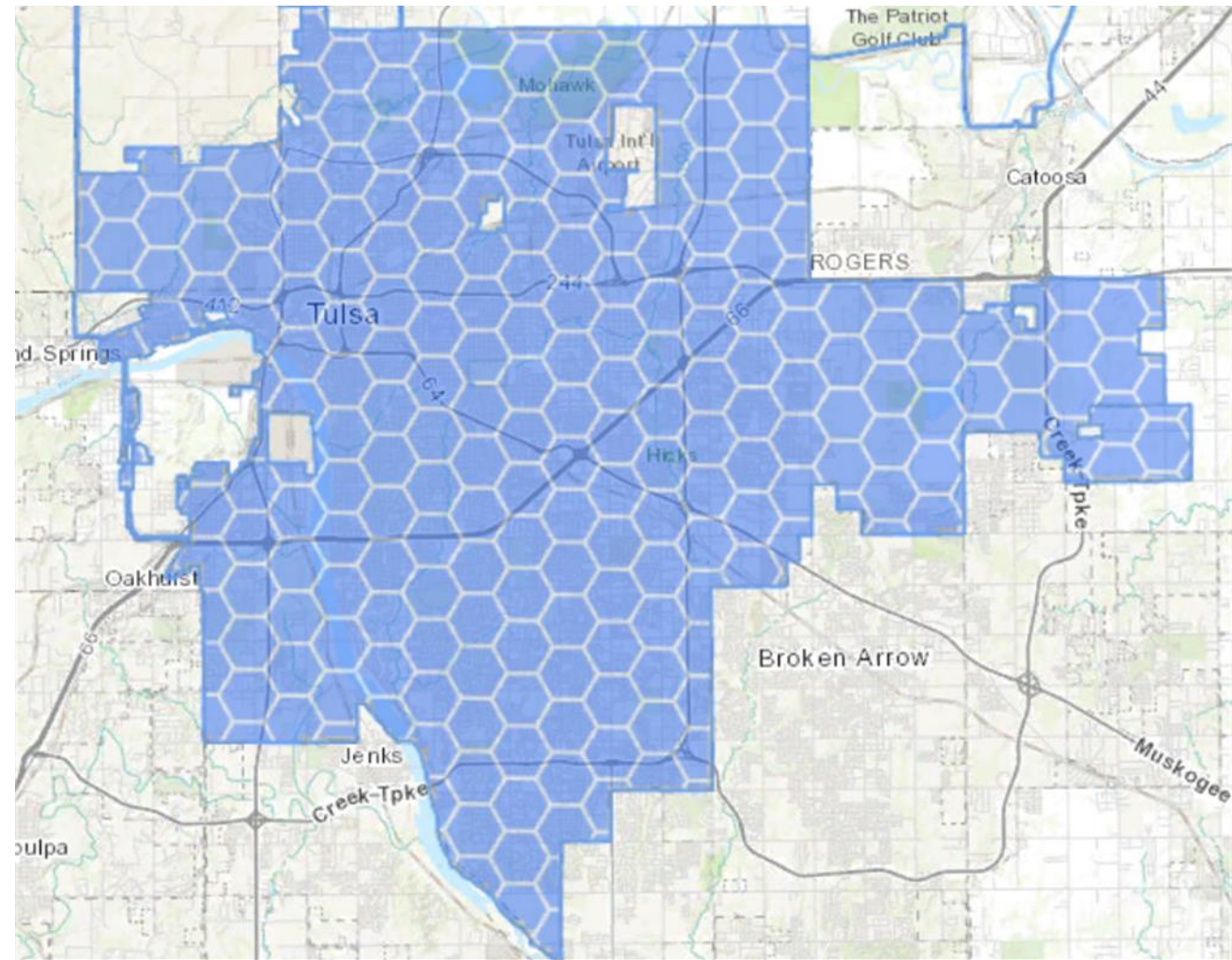
Tulsa Property Tax per Acre

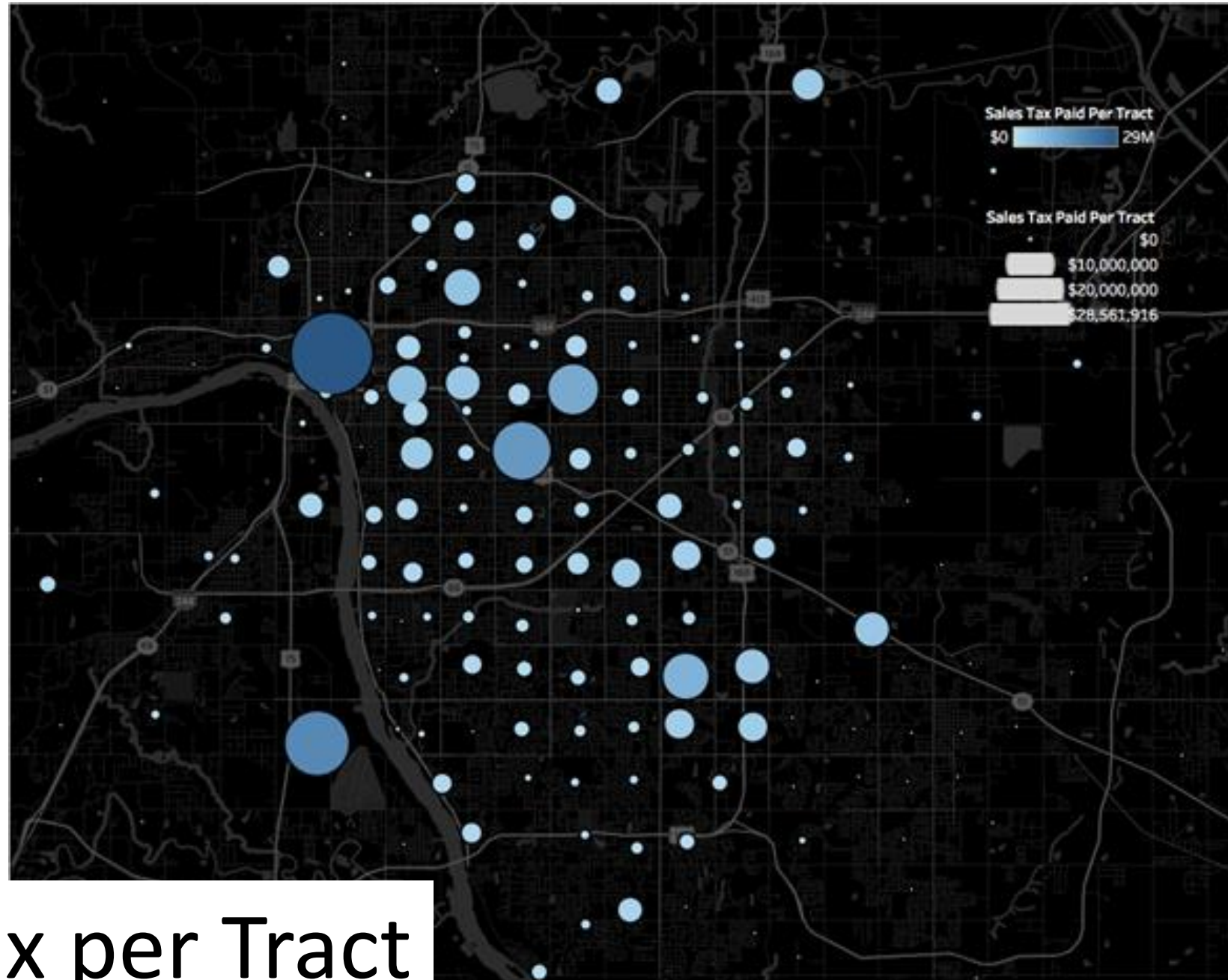
Sales Tax

- Confidential nature was a challenge
- Need to maintain individual business tax remittance anonymity
- Geocoded locations of 14,000 sales tax permits
- Spatially joined Census Tracts
- Treasury provided 2016 sales tax via Census Tract
- Applied average to multiple permit holders' locations



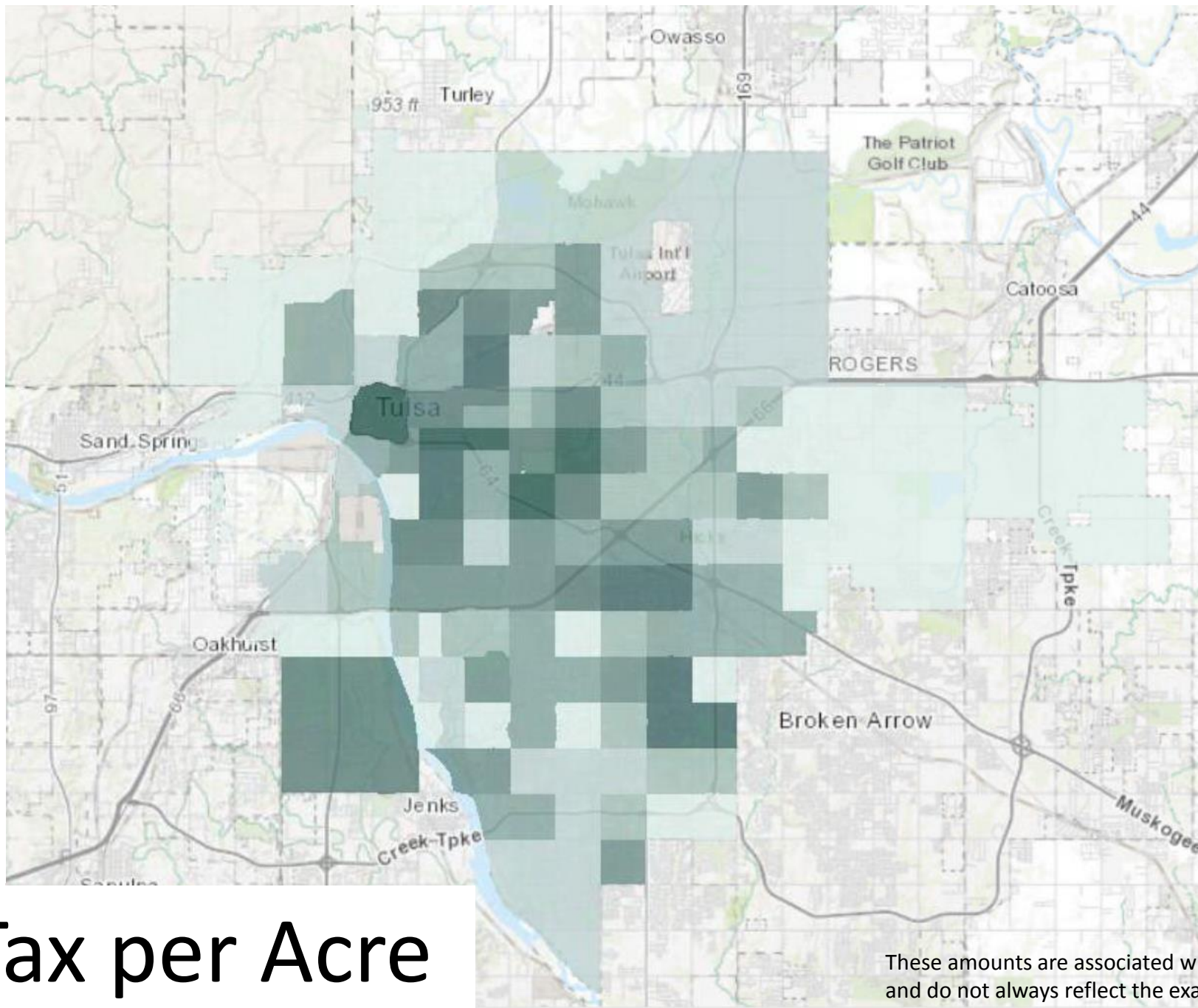
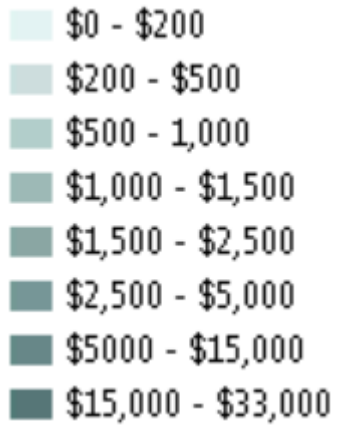
Sales Tax Permit Vendor Addresses





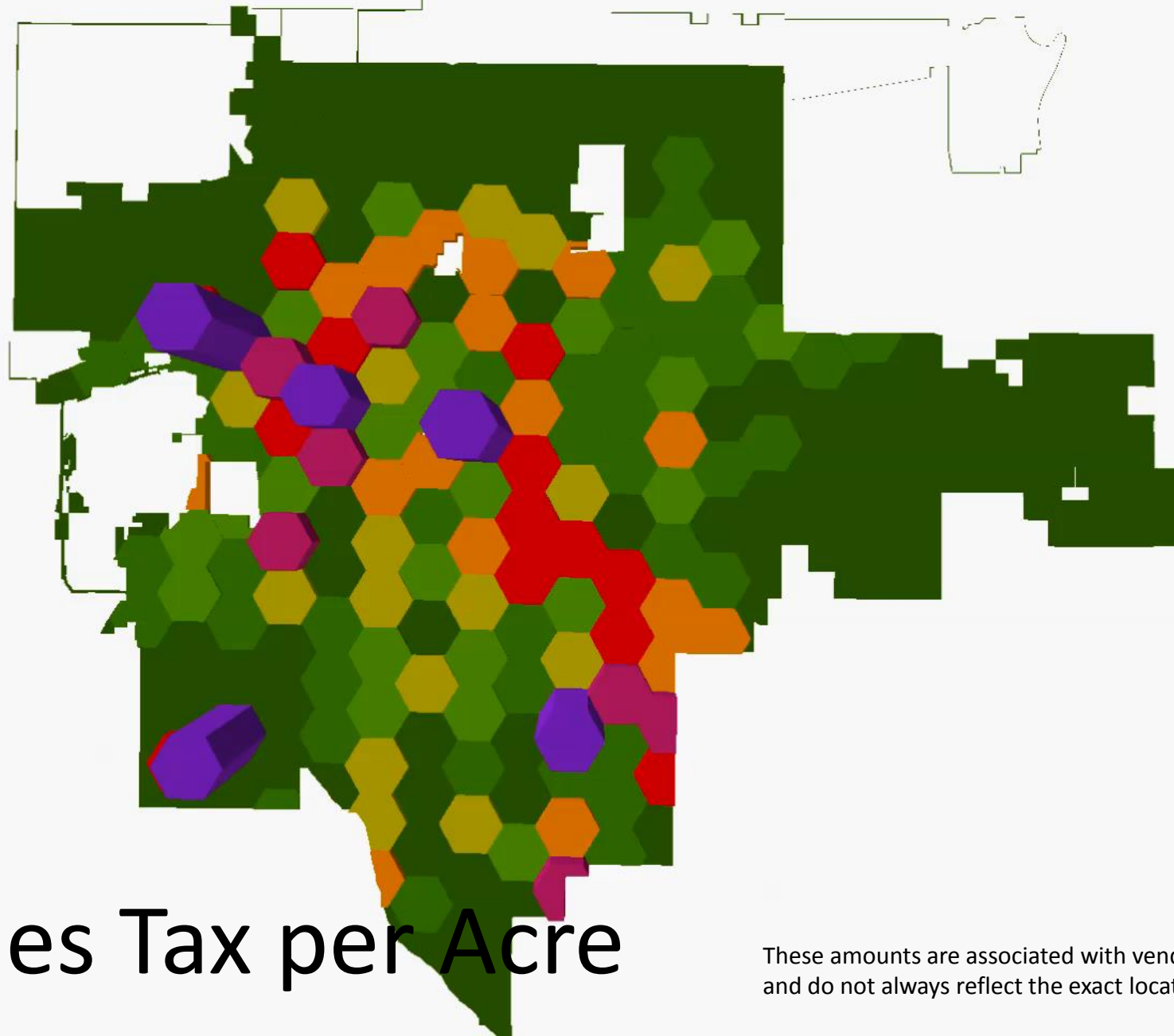
Sales Tax per Tract

These amounts are associated with vendor's permitted address and do not always reflect the exact location a sale is made.



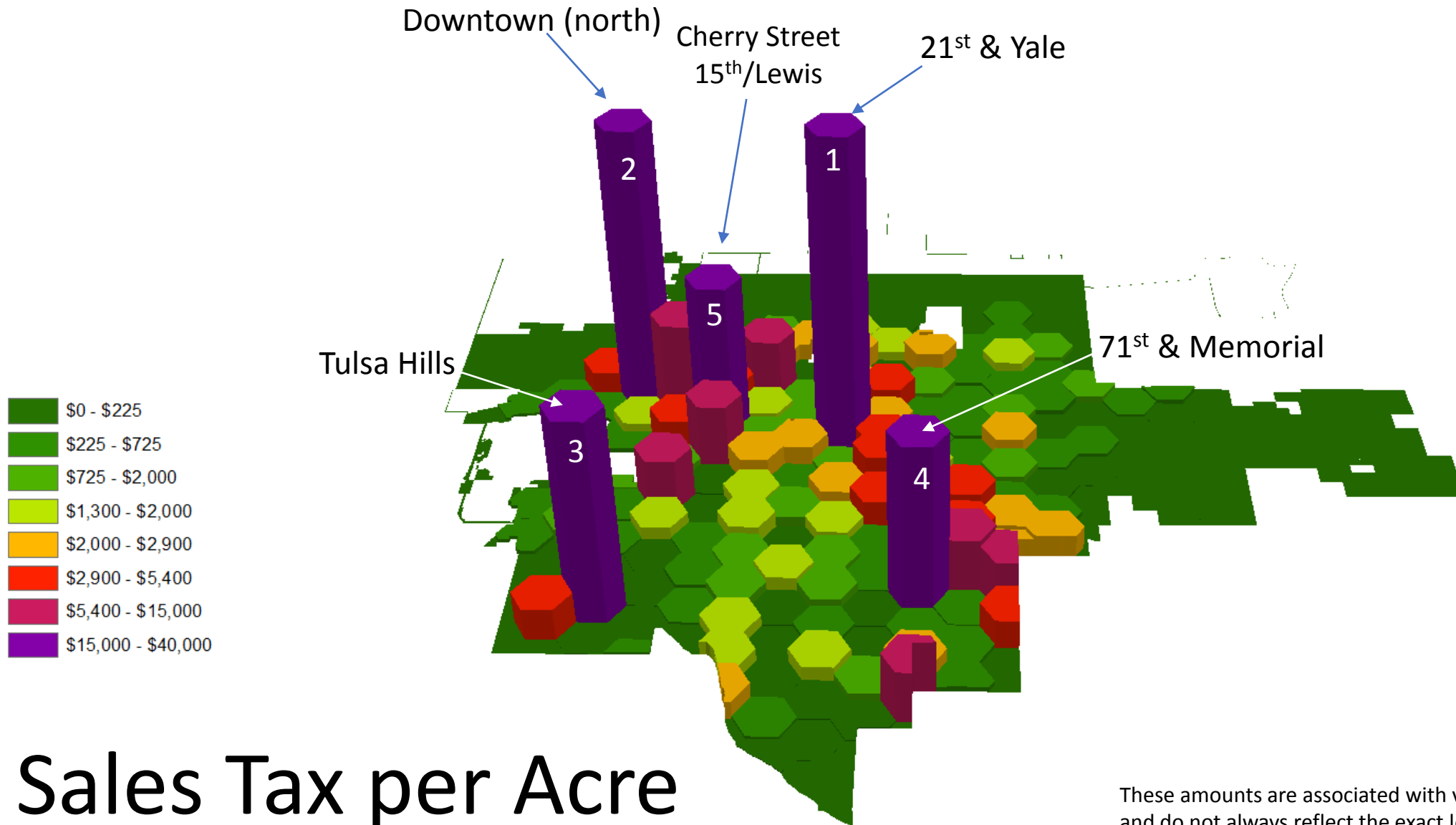
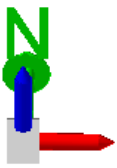
Sales Tax per Acre

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Tulsa Sales Tax per Acre

These amounts are associated with vendors' permitted address and do not always reflect the exact location a sale is made.



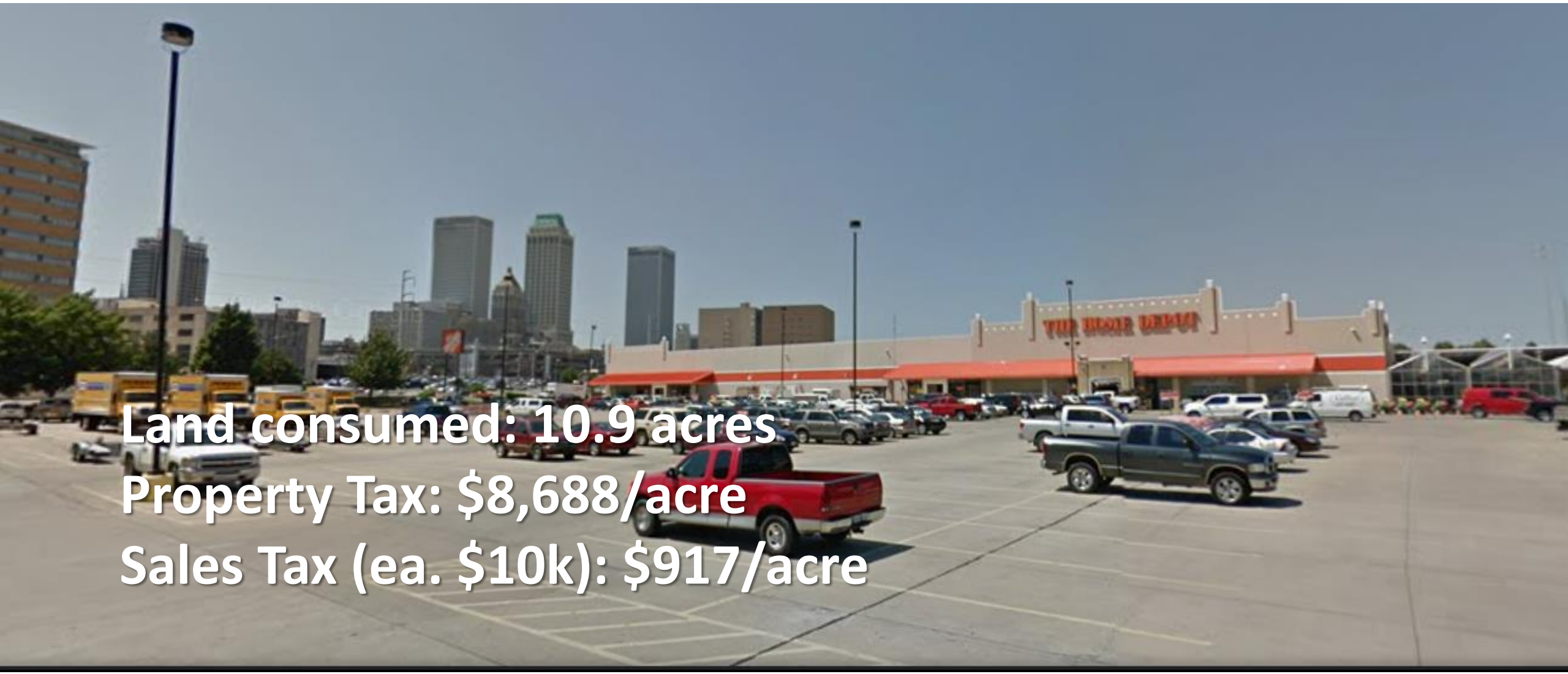
These amounts are associated with vendors' permitted address and do not always reflect the exact location a sale is made.

An aerial photograph of a rural landscape. In the foreground, there are green fields, a small river, and a cluster of houses with solar panels on their roofs. In the middle ground, there are more fields, some of which are yellow, and a line of trees. In the background, there is a large, forested hill under a clear blue sky with a few wispy clouds.

Productivity of development types

Which development types yield more per acre?

Home Depot – 901 S Elgin Ave



Land consumed: 10.9 acres

Property Tax: \$8,688/acre

Sales Tax (ea. \$10k): \$917/acre

El Guapo's South – 8161 S Harvard Ave



Land consumed: 1.7 acres

Property Tax: \$9,058/acre

Sales Tax (ea. \$10k): \$5,805/acre

Cityplex Towers – 2408 E 81st St

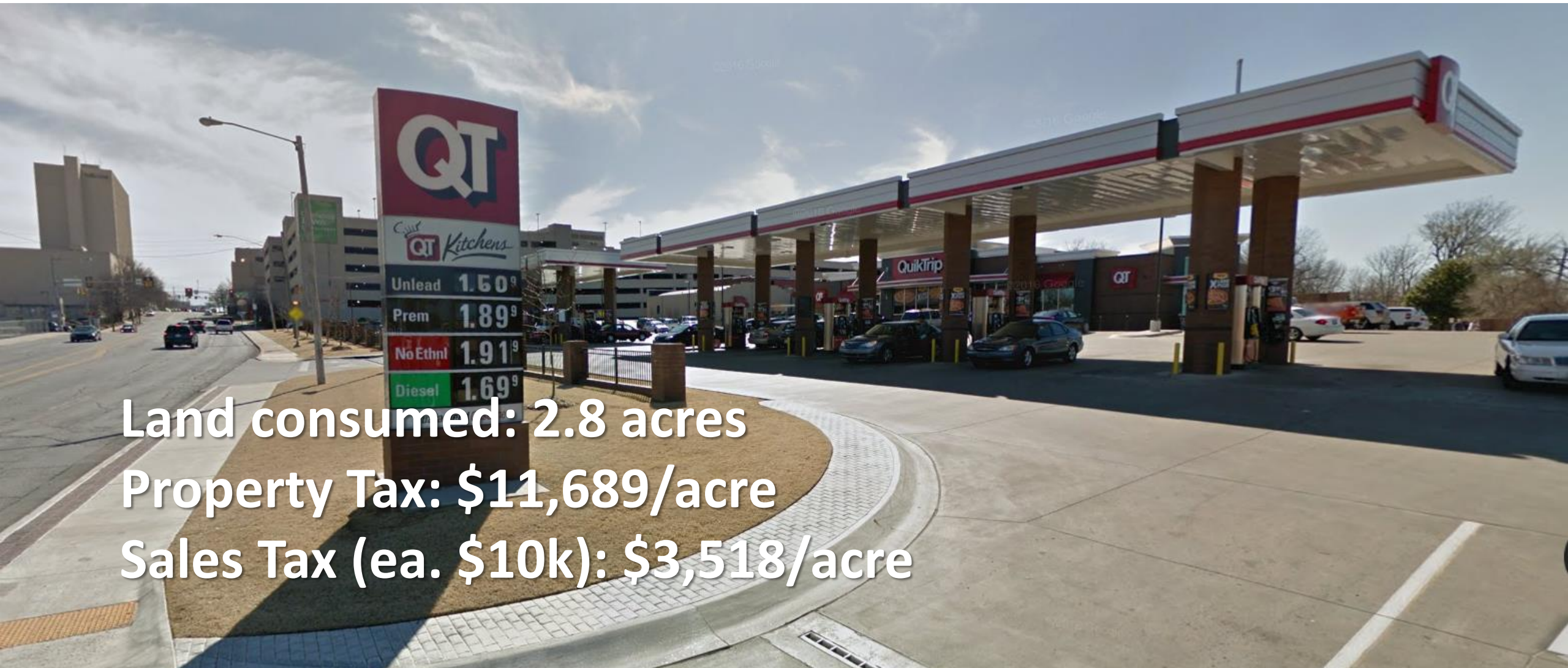
Land consumed: 46.6 Acres

Property Tax: \$9,313/acre

Sales Tax (ea. \$10k): \$214/acre



QuikTrip – 1022 S Utica Ave



Land consumed: 2.8 acres

Property Tax: \$11,689/acre

Sales Tax (ea. \$10k): \$3,518/acre

Costco Wholesale – 10220 S Memorial Dr.



Land consumed: 17.2 acres
Property Tax: \$14,018/acre
Sales Tax (ea. \$10k): \$583/acre

Tulsa Hills – 7336 S Olympia Ave



Land consumed: 141.8 acres

Property Tax: \$14,300/acre

Sales Tax (ea. \$10k): \$71/acre

Woodland Hills Mall – 7021 S Memorial Dr



Land consumed: 75.5 acres

Property Tax: \$32,279/acre

Sales Tax (ea. \$10k): \$132/acre



Trader Joe's – 3702 S Peoria Ave

Land consumed: 1.5 acres

Property Tax: \$40,033/acre

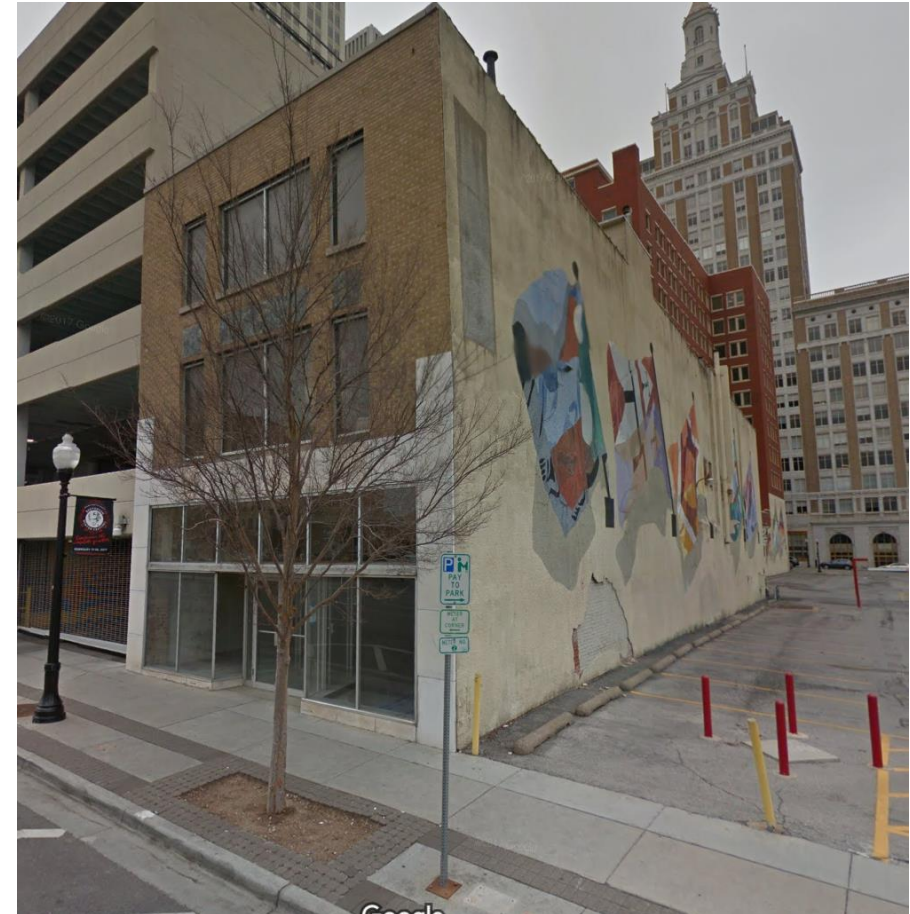
Sales Tax (ea. \$10k): \$6,620/acre

Triangle Building – 314 S Cincinnati Ave

Land consumed: 0.09 acres

Property Tax: \$89,764/acre

Sales Tax (ea. \$10k): \$107,296/acre



East Village Bohemian Pizza – 816 E 3rd St

Land consumed: 0.04 Acres

Property Tax: \$152,821/acre

Sales Tax (ea. \$10k): \$229,358/acre

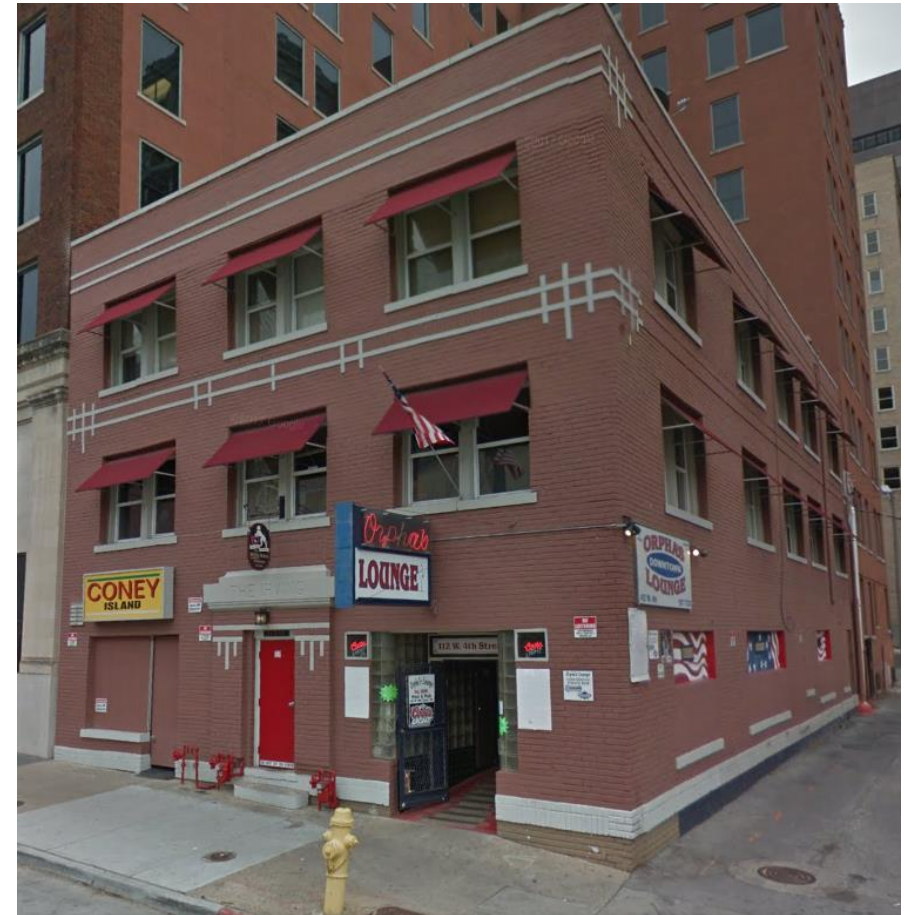


Orpha's Lounge – 112 W 4th St

Land consumed: 0.07 acres

Property Tax: \$157,794/acre

Sales Tax (ea. \$10k): \$145,138/acre

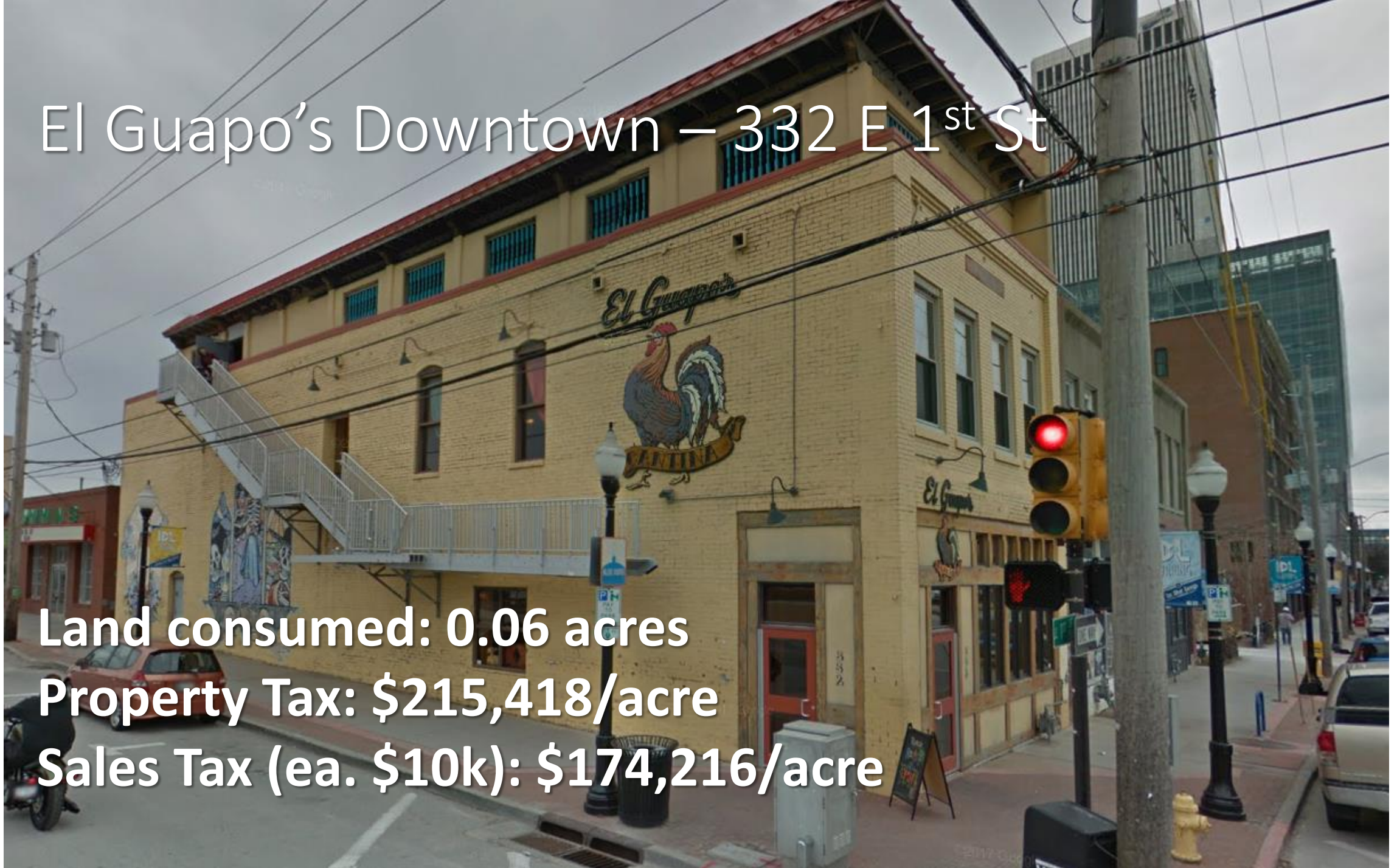


El Guapo's Downtown — 332 E 1st St

Land consumed: 0.06 acres

Property Tax: \$215,418/acre

Sales Tax (ea. \$10k): \$174,216/acre



El Guapo's South – 8161 S Harvard Ave



Land consumed: 1.7 acres

Property Tax: \$9,058/acre

Sales Tax (ea. \$10k): \$5,805/acre

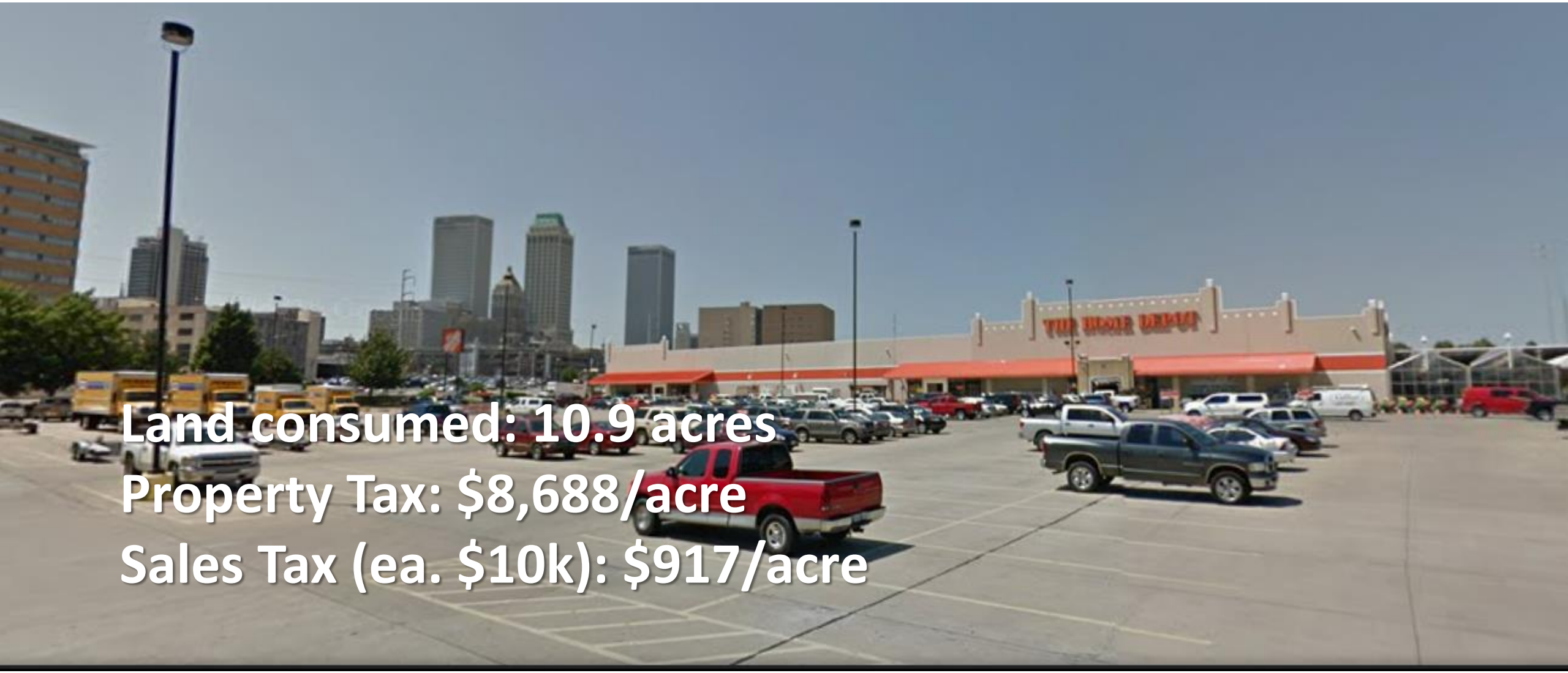
Mid-Continent Tower

401 S Boston Ave

Land consumed: 0.32 acres
Property Tax: \$825,470/acre
Sales Tax (ea. \$10k): \$31,114/acre



Home Depot – 901 S Elgin Ave



Land consumed: 10.9 acres

Property Tax: \$8,688/acre

Sales Tax (ea. \$10k): \$917/acre



If Costco generates \$10 million in sales tax

$$\frac{\$10,000,000}{17.2 \text{ acres}} = \$581,400 \text{ per acre}$$



El Guapo's needs to generate \$35,000 in sales tax for same per acre productivity

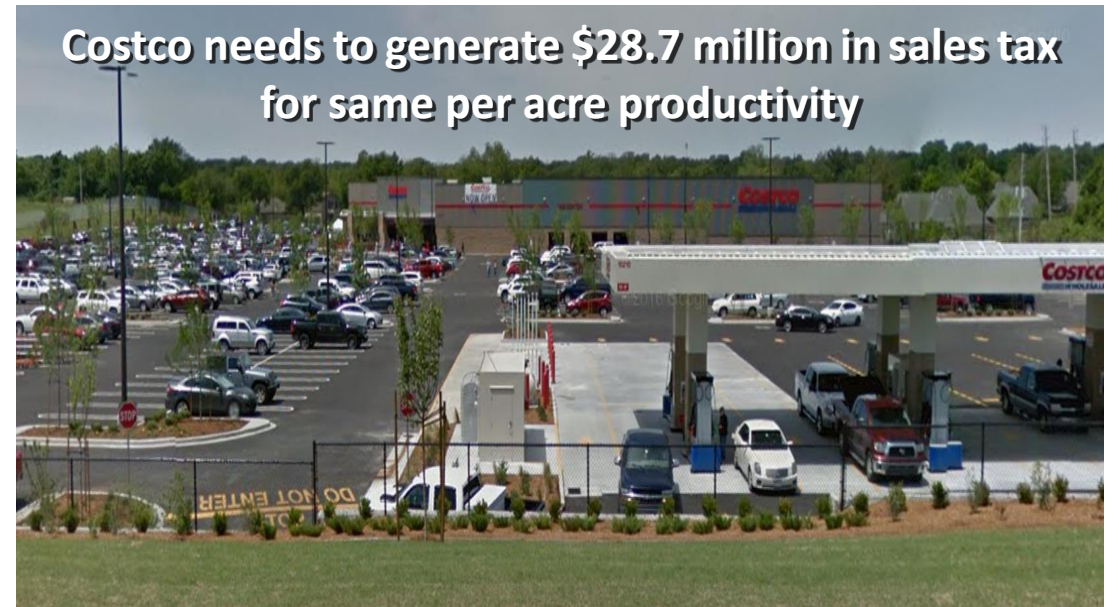
$$\frac{\$34,884}{0.06 \text{ acres}} = \$581,400 \text{ per acre}$$



If El Guapo's generates \$100,000 in sales tax

\$100,000

0.06 acres = \$1,666,666 per acre



Costco needs to generate \$28.7 million in sales tax
for same per acre productivity

\$28,666,655

17.2 acres = \$1,666,666 per acre

Further Investigation

- Characteristics of highly productive land use over time
- Does our zoning code make it easy to build productive places?
- 21st & Yale
- Land Tax vs Improvements Tax
- Cost of Infrastructure & Services



Target
1701 S. Yale
Black Friday 2016
Photo: Daniel Jeffries



Target
1701 S. Yale
Black Friday 2016
Photo: Daniel Jeffries



Tulsa Hills
Black Friday 2016
Photo: Craig Immel



71st & Memorial
Black Friday 2016

Photo: Craig Immel

Further Investigation

- Characteristics of highly productive land use over time
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Lessons Learned

Geocoding - getting a latitude and longitude coordinate from street address

Use the dissolve geoprocessing tool on condo parcels (i.e. Liberty Tower)

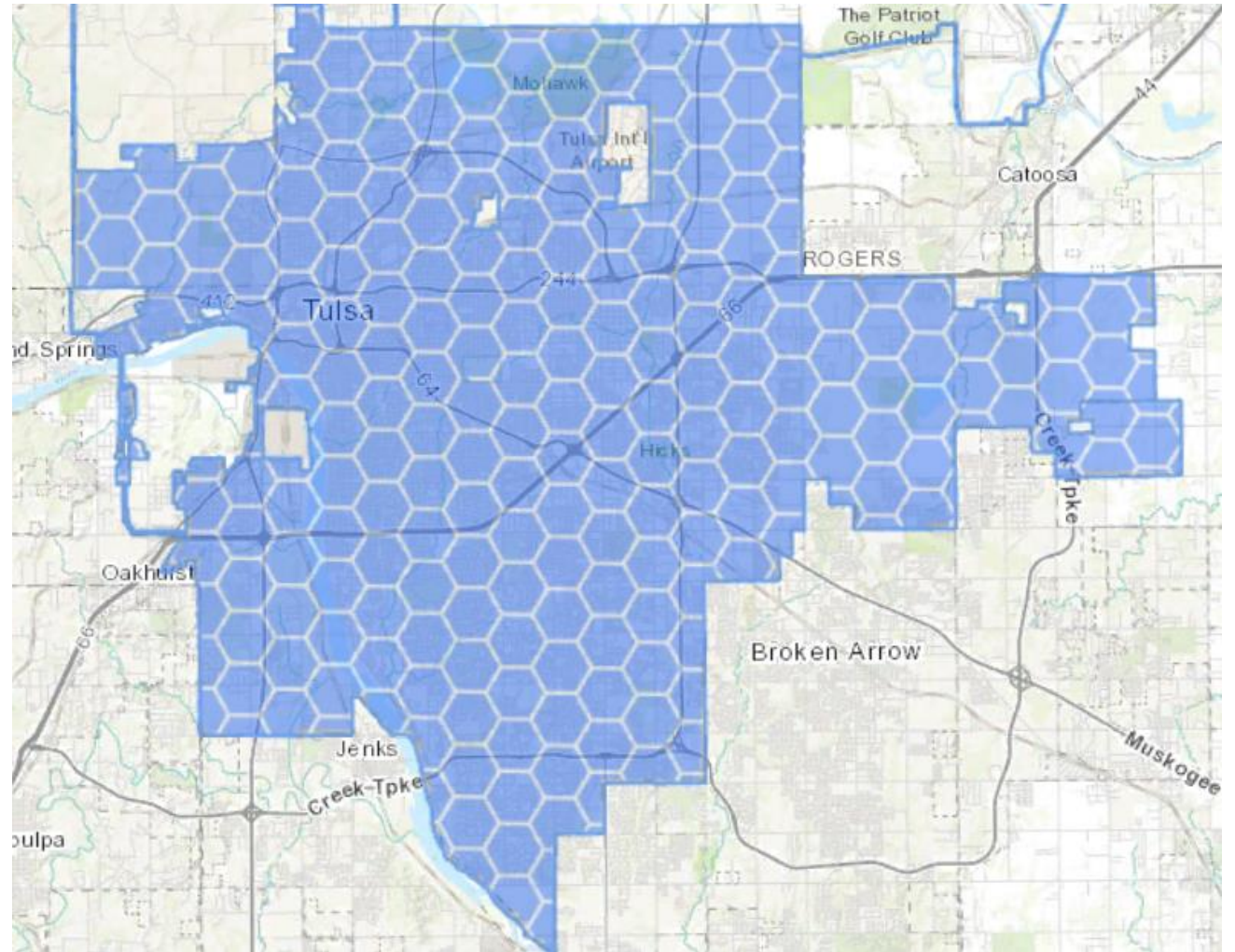
Data binning (parcel, census blocks, tracts, hex grids?)

Impossible to determine location of each sale

- 48% of remittances (10% of sales tax collected) can't be tied to a permit

- Sales tax is applied at the point of delivery

- Not necessarily the permit holder's address



Next Steps

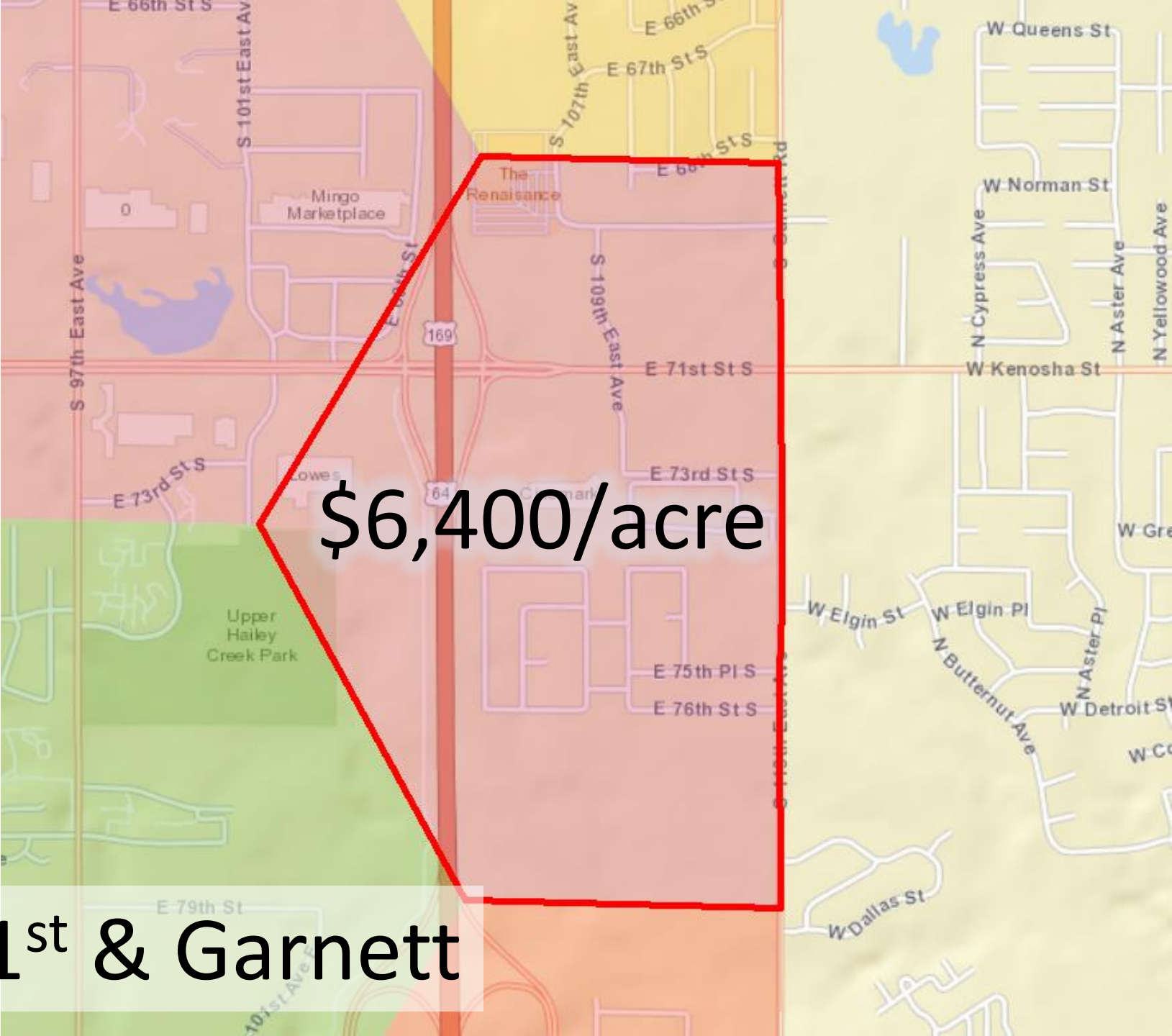
Geo-account revenue AND expenses



Net cash flow model of Lafayette Parish (County), Louisiana

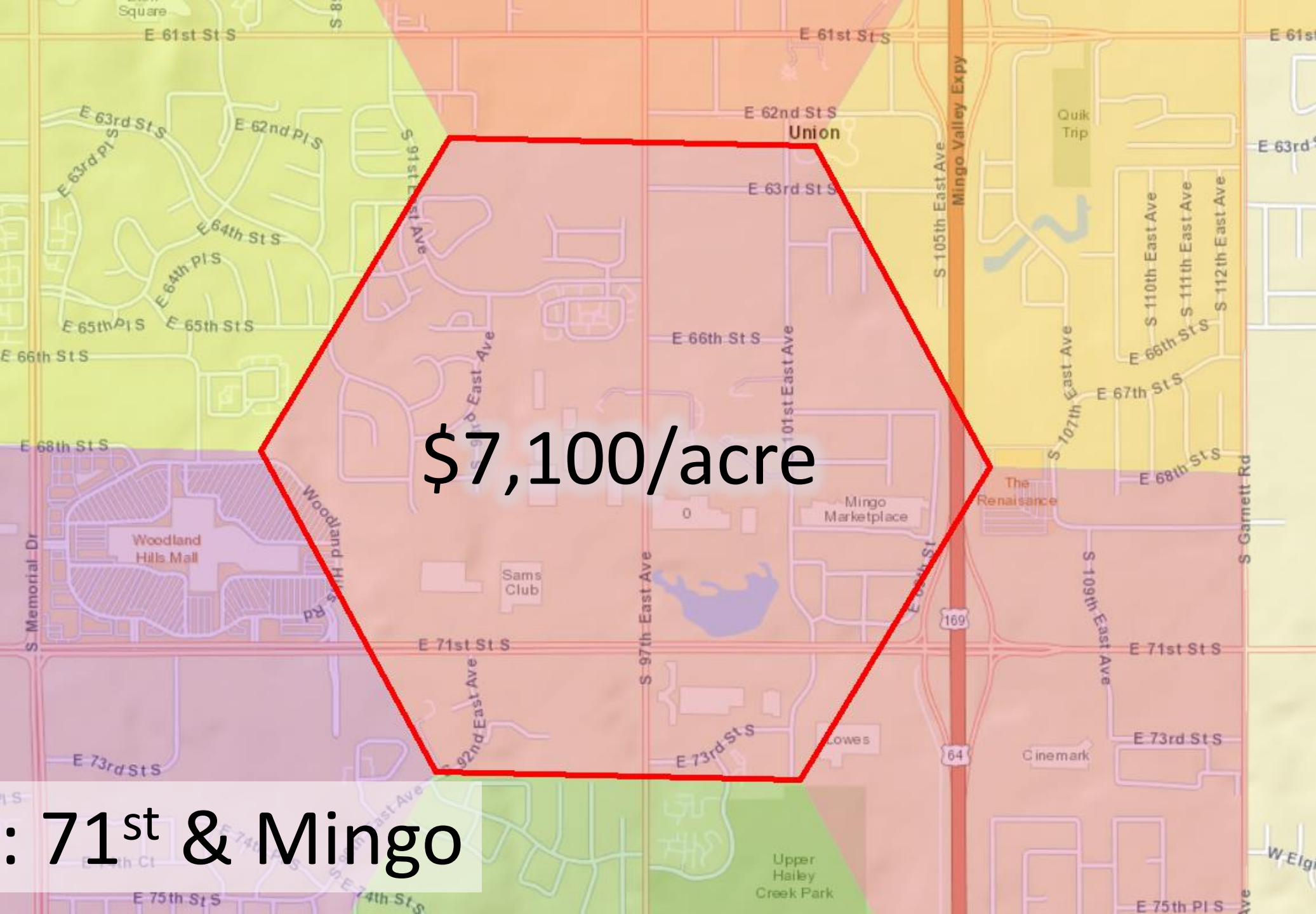
black=municipal tax exceeds maintenance cost

red=municipal taxes fall short of maintenance cost



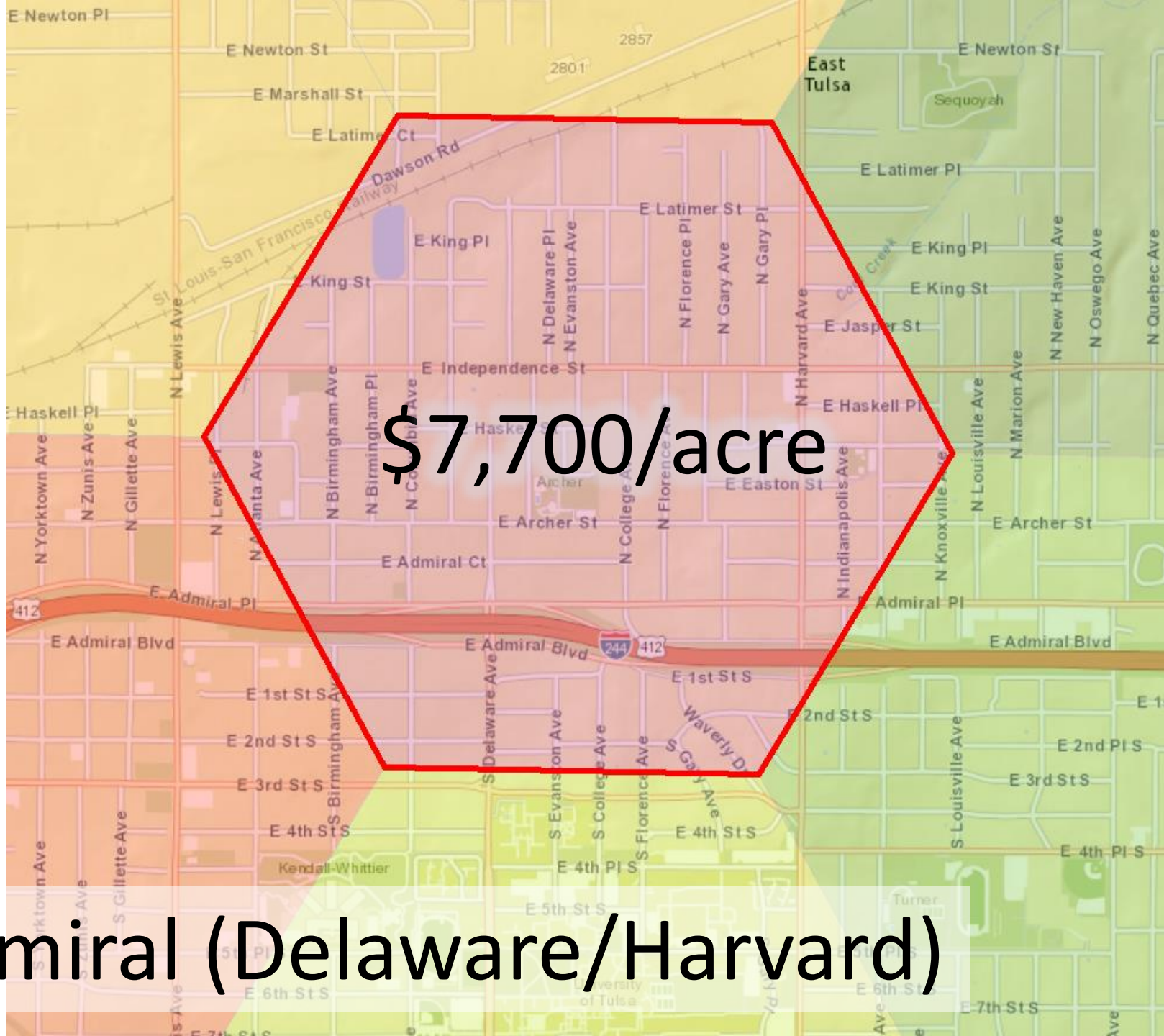
\$6,400/acre

#10: 71st & Garnett

A map of Union, Missouri, with a red-outlined area indicating a property for sale. The area is roughly rectangular, bounded by E 61st St S to the north, E 73rd St S to the south, S 91st East Ave to the west, and S 101st East Ave to the east. The map shows various streets, including E 61st St S, E 62nd St S, E 63rd St S, E 64th St S, E 65th St S, E 66th St S, E 67th St S, E 68th St S, E 71st St S, E 73rd St S, E 75th St S, S 91st East Ave, S 92nd East Ave, S 97th East Ave, S 101st East Ave, S 105th East Ave, S 107th East Ave, S 109th East Ave, S 110th East Ave, S 111th East Ave, S 112th East Ave, S 105th East Ave, S 107th East Ave, S 109th East Ave, S 110th East Ave, S 111th East Ave, S 112th East Ave, S 105th East Ave, S 107th East Ave, S 109th East Ave, S 110th East Ave, S 111th East Ave, S 112th East Ave. The map also shows landmarks such as Woodland Hills Mall, Sams Club, Mingo Marketplace, The Renaissance, Cinemark, and Upper Hailey Creek Park. The text "\$7,100/acre" is overlaid on the red-outlined area.

\$7,100/acre

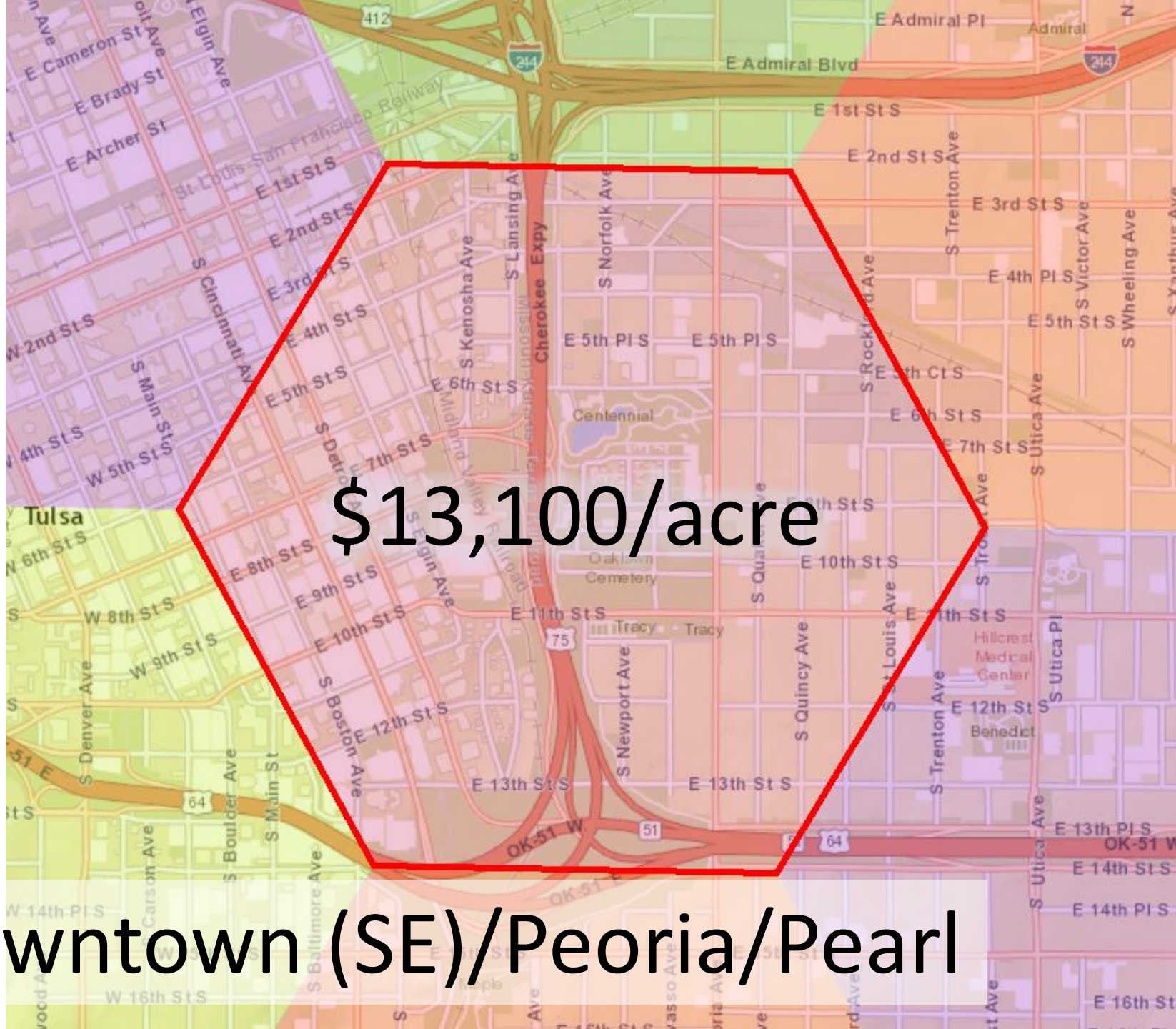
#9: 71st & Mingo



#8: Admiral (Delaware/Harvard)

[illegible]

#7: Utica Square



\$13,100/acre

#6: Downtown (SE)/Peoria/Pearl

\$19,800/acre

Cherry Street / 15th & Lewis

#5: Cherry Street / 15th & Lewis

A map of a residential area with a grid of streets. A red hexagon highlights a specific plot of land. The plot is bounded by S 71st East Ave to the north, S 73rd East Ave to the south, S 77th East Ave to the west, and S 79th East Ave to the east. The plot is located between E 71st St S and E 73rd St S. The plot is labeled with the number 71. The text "\$20,700/acre" is overlaid on the plot.

\$20,700/acre

#4: 71st & Memorial

A map of the Tulsa Hills area in Tulsa, Oklahoma. A red hexagon highlights a specific tract of land. The tract is bounded by S Jackson Ave to the west, S Elwood Ave to the east, W 71st St S to the north, and W 81st St S to the south. The tract is labeled "Tulsa Hills Shopping Center" and "Town Center Dr". The price "\$25,000/acre" is written in large black text across the center of the hexagon. The map shows surrounding streets including S Union Ave, S Waco Ave, S Yukon Ave, S Maybelle Ave, S Olympia Ave, S Houston Ave, S Elwood Ave, S Peoria Ave, S Quincy Ave, S 26th West Ave, W 68th St S, W 68th Pl S, W 71st St S, W 73rd St, W 73rd Pl, W 77th St S, W 78th St S, W 78th Pl, W 79th St, W 80th St S, W 81st St S, W 82nd St S, W 84th St S, W 85 St S, E 68th St, E 71st St S, E 81st St S, and Airport Way. A golf course is visible to the northwest, and a large body of water is to the northeast.

\$25,000/acre

#3: Tulsa Hills



\$36,200/acre

#2: Downtown (north)



\$40,000/acre

#1: 21st & Yale